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Stefan Zikeli

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MICHAEL BEST & FRIEDRICH LLP  
100 E WISCONSIN AVENUE  
Suite 3300  
MILWAUKEE, WI 53202

EXAMINER

LEYSON, JOSEPH S

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 23 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 23 only further recites limitations of the material to be processed by the claimed apparatus, which is related to the intended use of the claimed apparatus, and thus has no patentable weight. In other words, an apparatus can be operated under different processing conditions, but the structure of the apparatus remains the same. A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987); see MPEP 2114. “Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.” *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, “[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims.” *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). See MPEP 2115.

### ***Claim Rejections - 35 USC § 103***

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2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3-10, 12-14 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/21758 in view of Haynes et al. (US 6,117,379).

WO 96/21758 discloses an apparatus for producing continuously molded bodies from a molding material, such as a spinning solution containing cellulose, water and tertiary amine oxide, comprising a multitude of extrusion orifices, in a spinneret 2, through which during operation the molding material can be extruded into continuously molded bodies 4, a precipitation bath 5 and an air gap 3 arranged between the extrusion orifices and the precipitation bath 5, and a blowing means 7 for producing a cooling gas stream, the continuously molded bodies 5 being passed during operation in successive order through the air gap 3 and the precipitation bath 5, and the cooling gas

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stream being directed in the area of the air gap 3 to the continuously molded bodies 5.

Note that the depth of cooling gas stream is 3 to 10 mm (i.e., claim 4), whereas the depth of the air gap is 10-160 mm (i.e., claim 2). Therefore, the air gap between the extrusion orifices and the cooling gas stream forms a first shielding zone, and the air gap between the cooling gas stream and the bath form a second shielding zone. The cooling gas stream flows substantially in parallel with a plane in which the extrusion orifices are positioned on average (i.e., p. 3, lines 2-8). The cooling stream is substantially transverse to the direction of travel of the filaments (i.e., p. 3, lines 3-8).

Note that if the cooling stream is NOT totally transverse to the direction of travel of the filaments, then the cooling gas stream would have a velocity component oriented into the direction of passage. However, WO 96/21758 does not disclose the cooling gas stream being turbulent at least at the exit from the blowing means.

Haynes et al. (US 6,117,379) discloses that it is well known and conventional in the art to provide turbulent quench (cooling) gas streams to extruded filaments, so long as the filaments are not unduly disturbed or broken (i.e., col. 1, lines 6-67). Haynes et al. (US 6,117,379) also discloses placing a bar arrangement 10 at an exit to a blowing means (i.e., col. 6, lines 51-67) to increase the turbulence at the exit from the blowing means which flows across layers (rows) of filaments of the so as to increase the heat transfer rate without unduly disturbing or breaking the filaments (i.e., col. 1, lines 54-67; col. 4, line 66, to col. 5, line 22).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the apparatus of WO 96/21758 such that the cooling gas

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stream is turbulent at the exit from the blowing means because it is well known and conventional in the art to provide turbulent cooling gas flow across the filaments (or across the rows of filaments) to cool the filaments so long as the filaments are not unduly disturbed or broken, as disclosed by Haynes et al. (US 6,117,379). As to the characteristics of the cooling gas flow, such as the Reynolds number, velocity, width, specific blowing force, distance of the cooling area from the extrusion orifice in the direction of passage of the filaments, the distance I (instant claim 25) and the height L (instant claim 26), as respectively recited by the instant claims, such characteristics would have been found due to routine experimentation in finding optimum or operable characteristics of the cooling gas flow relative to other process and apparatus parameters, such as material to be extruded, number of extrusion holes, etc., in view of the teachings of WO 96/21758 and Haynes et al. (US 6,117,379).

5. Claims 11, 15, 16, 18, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/21758 in view of Haynes et al. (US 6,117,379) as applied to claims 1, 3-10, 12-14 and 21-24 above, and further in view of White et al. (US 5,639,484).

White et al. (US 5,639,484) discloses an apparatus (i.e., fig. 7) including a spinneret 124 with extrusion orifices forming filaments 125, and a blowing means 121 producing a cooling gas stream, the orifices being arranged on a substantially rectangular base in rows in a direction transverse to the direction of the cooling gas stream (i.e., fig. 7), wherein the number of the extrusion orifices in row direction is greater than in the cooling gas stream direction (i.e., fig. 7), wherein the width (D) of the

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cooling gas stream in a direction transverse to the direction of the passage of the filaments through the air gap is larger than the height (B) of the cooling gas stream in the direction of passage (i.e., fig. 7).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the apparatus with the spinneret and blowing means of White et al. (US 5,639,484) because such a modification would provide an art recognized alternative configuration for the spinneret and blowing means, as disclosed by White et al. (US 5,639,484), to produce rows of filaments followed by cross draft cooling.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/21758 in view of Haynes et al. (US 6,117,379) as applied to claims 1, 3-10, 12-14 and 21-24 above, and further in view of Patel (US 3,932,576).

Patel (US 3,932,576) discloses a precipitation bath 16 having disposed therein a deflector 30 by which during operation filaments 22 are deflected as a substantially planar curtain to the precipitation bath surface (i.e., figs. 1 and 2), and, outside of the precipitation bath 16, a bundling means 23, 25 is provided by which during operation the filaments 22 are united to form a fiber bundle.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the apparatus with the deflector and bundling means of Patel (US 3,932,576) because such a modification would provide an art recognized alternative means for collecting the filament product, as disclosed by Patel (US 3,932,576).

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7. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/21758 in view of Haynes et al. (US 6,117,379) as applied to claims 1, 3-10, 12-14 and 21-24 above, and further in view of Nichols et al. (US 4,033,742).

Nichols et al. (US 4,033,742) disclose a blowing means including nozzles 6 producing a plurality of individual cooling gas streams arranged side by side in row direction of extrusion orifices enabling cooling across the width of a spinneret (i.e., figs. 1 and 2).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the apparatus with a plurality of individual cooling gas streams arranged side by side in a row direction of the extrusion orifices because such a modification is well known and conventional in the art and would provide an art recognized alternative configuration for the blowing means which enables cooling across the width of the spinneret, as disclosed by Nichols et al. (US 4,033,742).

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to



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be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims

10. Claims 1 and 3-26 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 7,364,681 in view of Haynes et al. (US 6,117,379).

Claims 1-24 of U.S. Patent No. 7,364,681 disclose the apparatus, substantially as claimed, except for the cooling gas stream being turbulent at the exit from the blowing means. Haynes et al. (US 6,117,379) is applied as above. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the apparatus of claims 1-24 of copending Application No. 10/500,998 such that the cooling gas stream is turbulent at the exit from the blowing means because it is well known and conventional in the art to provide turbulent cooling gas flow across the filaments (or across the rows of filaments) to cool the filaments so long as the filaments are not unduly disturbed or broken, as disclosed by Haynes et al. (US 6,117,379). As to the characteristics of the cooling gas flow, not disclosed by claims 1-24 of U.S. Patent No. 7,364,681, such as the Reynolds number, velocity, width, specific blowing force, and distance of the cooling area from the extrusion orifice in the direction of passage of the filaments, as respectively recited by the instant claims, such characteristics would have been found due to routine experimentation in finding optimum or operable

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characteristics of the cooling gas flow relative to other process and apparatus parameters, such as material to be extruded, number of extrusion holes, etc., in view of the teachings of Haynes et al. (US 6,117,379). Furthermore, where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device, In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). .

This is a provisional obviousness-type double patenting rejection.

### ***Response to Arguments***

11. Applicant's arguments with respect to the instant claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that the WO 96/21758 reference discloses a method of wet spinning; that Haynes discloses a hot melt spinning apparatus; that it would not be obvious to modify WO 96/21758 based on the teachings of Haynes, or to combine the teachings of the two references, because the wet spinning process of WO 96/21758 is distinct from the melt spinning processes described in Haynes; and that one skilled in the art would have no reason to combine the reference teachings with a reasonable expectation of success because techniques useful in a melt spinning process would not necessarily be applicable in a wet spinning process. The examiner respectfully disagrees. In response to applicant's argument that WO 96/21758 and Haynes are nonanalogous art, it has been held that a prior art reference must either be in the field of

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applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, they are in the same field of endeavor, namely apparatus for spinning filaments. Even if they could be considered NOT in the same field of endeavor, both references are reasonably pertinent to the particular problem with which the applicant was concerned, namely quenching the filaments in an air gap.

Applicant argues that Haynes's cooling gas stream exits in a "substantially laminar flow...from a source toward the bars." (col. 5, lines 47-48). The examiner agrees. The gas stream can exit substantially laminar OR the gas stream can exit in a turbulent fashion (i.e., col. 4, line 66, to col. 5, line 22). The examiner relies on the gas stream can exit in a turbulent fashion for the prior art rejection.

Applicant argues that Haynes discloses the flow velocity of quenching gas or air from the supply zones 140-143 should be conventional; and that, generally, the flow velocity of supply gas should range from about 50-500 feet per minute (col. 7, lines 1-4); and that, in contrast, instant claim 4 requires a flow velocity of 30 m/s, which is not a conventional flow velocity as used in Haynes, but is at least one order of magnitude greater. The examiner agrees. However, the range from about 50-500 feet per minute (col. 7, lines 1-4) relates to fig. 3 of Haynes. Haynes also discloses that the conventional velocity can be obtained after being evenly distributed by perforated plates or screens (i.e., col. 4, line 66, to col. 5, line 22), and thus the velocity at the exit must be greater than conventional velocity prior to the perforated plates or screens in order to

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be at conventional velocity after being evenly distributed by perforated plates or screens. Thus, routine optimization could arrive at the claimed Reynolds numbers or velocities, as mentioned above, given that the velocity at the exit must be greater than conventional velocity prior to the perforated plates or screens in order to be at conventional velocity after being evenly distributed by perforated plates or screens.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSEPH LEYSON whose telephone number is (571)272-5061. The examiner can normally be reached on M-F 9AM-5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gupta Yogendra can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert B. Davis/  
Primary Examiner, Art Unit 1791  
1/21/09

/J. L./  
Examiner, Art Unit 1791